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CONTENTS

PAGE

CHEESMAN, Miss L. E., and PERKINS, R. C. L., M.A., D.Sc., F.R.S. Halictine bees from the New Hebrides and Banks Islands (Hymen.) . . . . . 161–172, 3 figs.

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HALICTINE BEES FROM THE NEW HEBRIDES AND BANKS ISLANDS (HYMEN.)

By Miss L. E. Cheesman and R. C. L. Perkins, M.A., D.Sc., F.R.S.

[Read 19th October, 1938.]

With Three Figures.

The six species of *Halictus* here enumerated were collected by Miss L. E. Cheesman in the New Hebrides and Banks Islands during 1929 and 1930. Two of these species had been collected by Comm. J. J. Walker and described by Prof. Cockerell many years ago; the remaining four appear to be new. The larger species, four in number, are closely allied to one another and belong to the group "Striaticipites," as also does one very small one, which is very different from the others. These agree generally in form, in the sculpture of the head and abdomen and in the clothing of the latter, and in all of them the mesonotal punctures become obsolete or ill-defined and very sparse on the anterior part of the surface, where the minute sculpture is very dense. The sculpture of the mesonotum and of the propodeum furnish good characters for the separation of the species. Both colour and structural characters vary considerably in individuals of a species, *e.g.* the number of teeth on the spur of the hind tibiae, and the details of sculpture. The remaining species (*H. zingowli*) is also minute and has no relationship to the others, not being Striaticipitine, but belonging to the group "Nomioidiformes." The two species previously known, *H. epiensis* and *H. tannaensis*, described by Cockerell, were collected in considerable numbers and have a wide distribution, both being found on Erromanga in the south of the New Hebrides and also so far north of these as Vanua Lava of Banks Islands. The two new species allied to these were each from one island only: *H. ounuensis* on Malekula, and *H. wilsoni* (which is extremely close to the widespread *H. tannaensis*) on the southernmost island, Aneityum.

To what extent special varieties, or subspecies, may occur, when all the numerous islands are fully explored is quite uncertain, but apparently the single ♀ of *H. tannaensis* from Erromanga is the one most similar to the actual type taken on Tanna, a neighbouring island to the south; the Erromanga specimens of *H. epiensis* are as a rule superficially distinguishable from those on islands to the north of this, and the single specimen of *H. aponi* from that island is still more notably distinct from those on Malekula.

Males of three only of the six species of *Halictus* were found and there would appear to be considerable variation in the individuals of the two species that were obtained in some numbers. For this reason the descriptions are made chiefly from the females.

The types of the new species are in the British Museum collection.

Table of ♀♀.

1. Head in front with longitudinal striation, the vertex and sides behind the eyes are also striate in most species . . . . . 2.
   Head in front not striate, but appearing densely granulate owing to the close reticulation of the surface . . . . . 7.

2. Larger species (6 mm. or more in length) basal tergite with fine transverse striation over the whole surface or nearly . . . . . 3.
   A small species (under 5 mm. in length) basal tergite smooth and polished over most of its surface, though the apical impression has a fine transverse sculpture . . . . . 6.
3. Anterior area of the propodeum with rather fine, more or less waved longitudinal wrinkles, the middle one straight, those on either side oblique; the area is not bounded behind by a sharply raised edge in the middle, but is undefined there . . . . . *epiensis* Cock.
   Anterior area with a sharply raised transverse margin behind, at least in the middle, connecting the longitudinal *rugae*, and defining the area, which is often shining between the wrinkles . . . . . 4.
4. Abdomen black; sculpture of mesonotum very dense, rough, striato-punctate, the striae continued to the extreme front; sides of head behind the eyes slightly rounded, the occipital angles much rounded off . *ounuensis* sp. n.
   Abdomen notably metallic coloured at least on the basal part of the first tergite; mesonotum smoother, the sculpture less dense, the punctures at least to a considerable extent on the disc more or less remote, striation not reaching the front margin; sides of the head behind the eyes straight or even slightly concave, the occipital angles distinct . . . . . 5.
5. Mesonotum over the whole disc somewhat evenly (though not very densely) punctured, the punctures not very dissimilar in size . . *tannaensis* Cock.
   Mesonotum over the whole disc very remotely, sparsely punctured, some of the punctures much larger than others . . . . . *wilsoni* sp. n.
6. Mesonotum somewhat evenly, but not densely punctured, the punctures fine and very shallow, so that in some aspects they are rendered indistinct owing to the dense granulate-like sculpture of the surface, which is microscopically reticulate . . . . . *aponi* sp. n.
7. Mesonotum dull, greenish metallic, appearing granulate from the dense reticulate sculpture, the punctation so effaced as to be practically absent; abdomen also dull metallic, the sculpture consisting of dense transverse striation . . . . . *zingowli* sp. n.

Halictus epiensis Cockerell.

H. epiensis Cockerell, 1916, *Proc. Acad. nat. Sci. Philad.* **68**: 369.

♀. Head aeneous, clypeus apically purplish-black, brilliant metallic blue or green behind this, which colour is more or less bordered with red or copper, extending sometimes on to the supraclypeal plate. Mesonotum metallic green or blue, often with brassy reflections, sometimes particoloured, the scutellum concolorous with it or sometimes wholly blue. Abdominal tergites more or less metallic or nigroaeneous, but in specimens from Erromanga the basal part of the first tergite only appears notably metallic. Antennae dark brown or blackish fuscous, sometimes rather paler beneath. Legs with the coxae and femora black or blackish-brown, metallic, the tibiae brown, the front ones paler beneath, the hind ones varying from darker brown to reddish-brown. Wings strongly infuscated, stigma dark brown.

Head seen from above strongly narrowed behind the eyes, the sides nearly straight or very slightly concave to the distinct occipital angles; clypeus coarsely punctured in front, the punctures becoming much finer at or towards the base, the supraclypeal plate with very sparse, feebly-impressed punctures; face above the antennae and along the inner orbits rather densely clothed with erect pale hairs, the sculpture dense, punctured and striate, the longitudinal striae continued downwards to the end of the eyes and upwards round these to be continued in the longitudinal ones of the sides of the head behind them,

where the striation is also partly formed by the continuation of the transverse striae of the vertex behind the ocelli.

Mesonotum with dense and rough sculpture, striate and closely punctured; in the middle towards the front margin the granulate sculpture of the surface is very dense and the punctures become sparse and indefinite; in dorsal aspect there is a dense outstanding pubescence of a yellowish colour at the sides in front, but in some specimens the hairs are sordid or sooty; in side view the surface is seen to be well clothed with erect hair, which in some specimens is pale, in others mostly dark or sordid. The scutellum is smoother than the mesonotum, closely and distinctly punctured, often more or less shining and with a smoother, less punctured space on either side of the middle; postscutellum dull, granulate, clothed with pale hairs like those at the sides of the scutellum, but the hairs are often more or less sordid or sooty. Propodeum as a rule dull or only moderately shining, its surface granulate, its dorsal surface rather longer than the scutellum; the anterior area is rather finely longitudinally rugose, the median wrinkle straight, those on each side oblique and there is no sharply raised transverse margin in the middle behind, so that the area is there undefined, the fine *rugae* ending on the brow, while those on each side are continuous with the fine ones on the undefined lateral areas; the amount of reticulation of the rugosity of the area is variable, this being conspicuous in some examples, while in others the transverse connections which form the reticulation are few, or appear as mere lateral projections from the longitudinal wrinkles, not reaching fully across the space which separates these; posterior face of the propodeum appearing granulate from the microscopic reticulation of the surface, the side margins raised from their base to the apex of the lateral areas; above the insertion of the abdomen transverse wrinkles may be present or wanting, and the pubescence is long and erect from the surface; the metapleura are transversely striate on their upper part, while the mesopleura in front of them have a very fine transverse striate sculpture, and are clothed with longish, pale, erect pubescence.

Abdomen nigroaeneous, the metallic tint sometimes only distinct on the basal part of the first tergite, the following ones being black. First tergite very finely transversely striate and with some feeble punctures, sometimes hardly noticeable, the clothing very sparse and short, except for the pale fringe of hairs on each side, the apical impression distinct, though more or less feebly defined at the middle, excessively finely and closely, transversely striate, the striae sometimes difficult to see even under a very strong lens (× 35); 2nd and 3rd tergites also striated and very finely punctured basally, where the short, subdepressed hairs are quite dense and conspicuous; the apical impression of the 2nd distinct throughout and with extremely fine transverse striation, the transverse row of hairs that spring from its base very short on the middle part; on tergite 3 they are longer though they do not nearly reach back to the hind margin at the middle; on tergite 4 they are still longer, and on the basal part in front of the impression the granulate punctation is more conspicuous than on the more basal tergites. The *rima* and sometimes the adjoining parts of the 5th tergite are reddish or yellowish, the *rima* edged with yellowish or brownish hairs having a golden sheen in some aspects. Hairs of the ventral scopa pale brownish-white, very dense on the down-turned sides of the tergites. Calcar of hind tibia with 4–6 teeth. Length 6–8 mm. (For fig. of face, of head above, of propodeum and hind femur see figs. 1, b, 2, a, 2, e, 3, b.)

Loc. New Hebrides: Malekula Is., Ounua, 3 ♀♀, ii.1929; Malua Bay, 4 ♀♀, vi., vii.29; South West Bay, 8 ♀♀, i., ii.1930; Erromanga Is., 3 ♀♀, vii.1930; Tanna Is., 1 ♀, x.1930; Banks Islands, Vanua Lava Is., 1 ♀, x.1929. Taken on flowers of *Wedelia* sp. and "pawpaw."

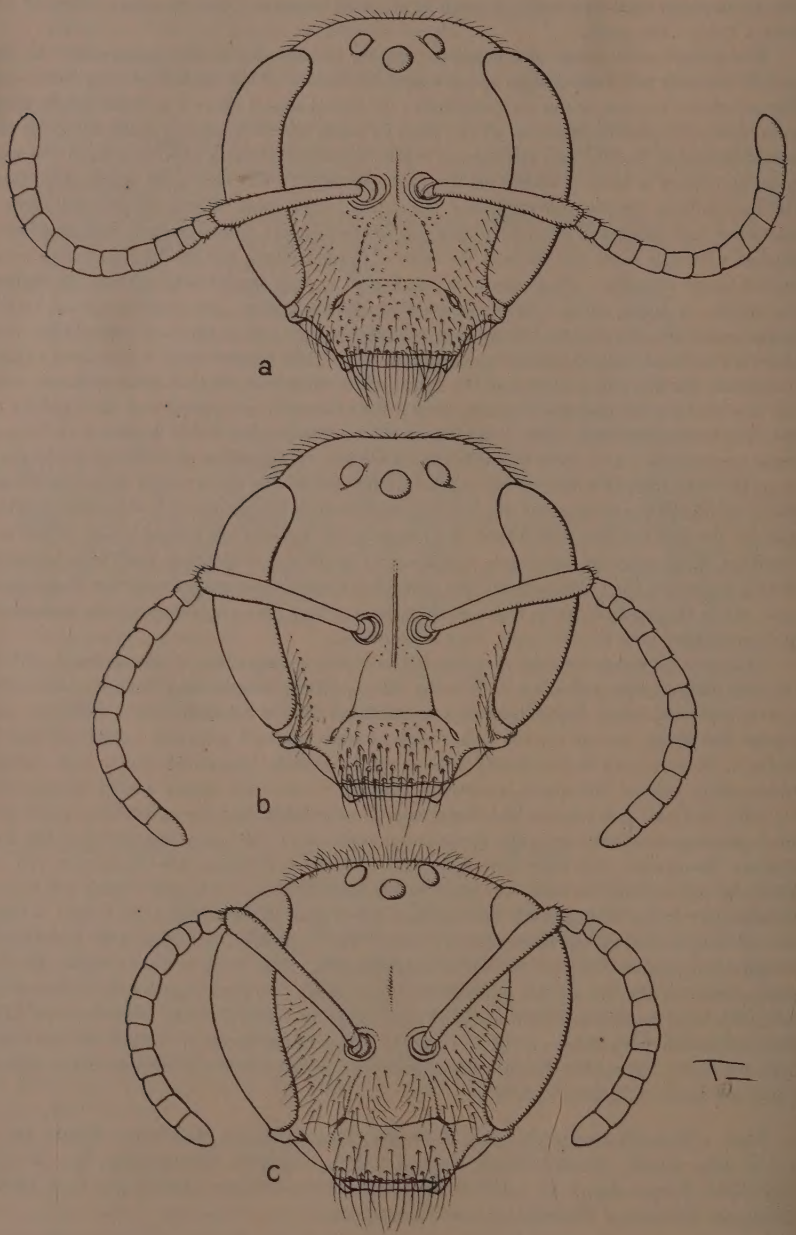

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FIG. 1.—Face of a, *H. ounuensis* ♀; b, *H. epiensis* ♀; c, *H. zingowli* ♀.

Halictus ounuensis sp. n.

♀. Head dull greenish or blue-black, the clypeus apically black or with slight purple tinge, behind this metallic green or blue and basally, together with the supraclypeal plate, more or less purple. Mesonotum green or blue, bordered in front and at the sides with purple, which sometimes extends down the middle and on to the scutellum. Antennae dark brown or blackish fuscous, the flagellum sometimes distinctly pale beneath, in one example quite red. Clothing of head and mesonotum greyish, more or less sordid or sometimes black, the hairs on the pleura and the long plumose ones of the postscutellum and the propodeum white or whitish. Wings infuscate. Coxae and femora black, or very dark, and metallic, hind tibiae and tarsi brown or reddish. Abdomen black, with no definite metallic colour, the declivous basal face of tergite 1 is black without the least appearance of the metallic tint of *epiensis*.

This species in form and sculpture is in most respects like *epiensis*, having a very densely sculptured mesonotum with the longitudinal striation more developed. The head viewed from above has the occipital angles much more rounded off, the sides behind the eyes not being straight or slightly concave to these angles as in that species; the interantennal carina is less developed, sometimes hardly noticeable. As a rule the striae of the frons bend inwards on the vertex behind the ocelli, whereas in *epiensis* they bend outwards and are continued down the sides of the face behind the eyes. In one specimen, however, the sculpture is similar to that of the species mentioned. Mesonotal surface rough with dense striato-punctate sculpture, the striae continued even in the middle to the extreme front. Whitish plumose hairs of the postscutellum and sides of scutellum together with those on the lateral areas of the propodeum and on its posterior face long, dense and very conspicuous, in good specimens concealing the lateral areas in some aspects. Anterior area of propodeum shining, with strong longitudinal waved wrinkles, defined at least in the middle by a sharp, raised margin. The abdomen is black, not metallic, shining, the transverse striation very fine, but quite visible under a very strong lens, the granulate punctures of the 3rd tergite usually stronger and more distinct than in *epiensis*, the clothing of the abdomen much less conspicuous than in that species, being largely black or fuscous; the hairs fringing the *rima* are yellow or golden. Ventral scopa whitish or pale brownish-white. Calcar of hind tibia with 4 or 5 teeth. Length 7–8 mm. (For fig. of face, of head above and propodeum see figs. 1, a, 2, c, 3, e.)

♂. Form rather robust, female-like, and the sculpture in general as in that sex, the abdomen black, with only very slight metallic tint. Head and mesonotum well clothed with erect sordid pubescence, in lateral view of the latter appearing sooty grey or blackish, on the mesopleura pale brownish-white, in one example more sooty than in the other; scutellum at the sides, postscutellum and the propodeum (when viewed from above) except the anterior area densely clothed with long plumose erect whitish or greyish erect pubescence.

Head dark blue or green, the clypeus and the plate above it more shining and more brightly metallic, in dorsal aspect strongly narrowed behind the eyes, the sides there nearly straight to the occipital angles, which are less rounded off than in the ♀ and fringed with outstanding pale brownish hairs; frontal striation continued inwards on the vertex behind the ocelli, as is usual in the ♀. Antennae dark brown or blackish fuscous, shortish, the flagellum subequal in length to head in front from the vertex to the apex of clypeus, its 3rd segment a very little longer than the 4th, which like the following is very slightly elongate.

Mesonotum blackish aeneous, striate and punctured, but smoother than in the ♀, and the striation being less strong, the punctation, though fine and shallow, appears more distinct; propodeum with strong longitudinal rugae, much as in the ♀, but the anterior area is much less regularly and definitely margined posteriorly. Hind femora somewhat aeneous, the tibiae and tarsi brown. Abdomen shining, ovate, at the sides with the out-

standing hairs black or fuscous; 1st tergite very finely transversely striate and with some feeble punctures, 2nd clothed with rather close-set, subdecumbent and very short, fuscous or black hairs, densely sculptured and with fine punctures amongst this surface sculpture, the apical impression well defined, very finely, transversely striate, and with a row of dark hairs springing from the base and extending right across the tergite, though, except at the sides, they do not reach back to the apical margin; the base of the segment is also impressed. The two following tergites are not very different from the 2nd, the 7th is red or reddish and distinctly margined so as to form a wide, punctate pygidial area. The ventral surface of

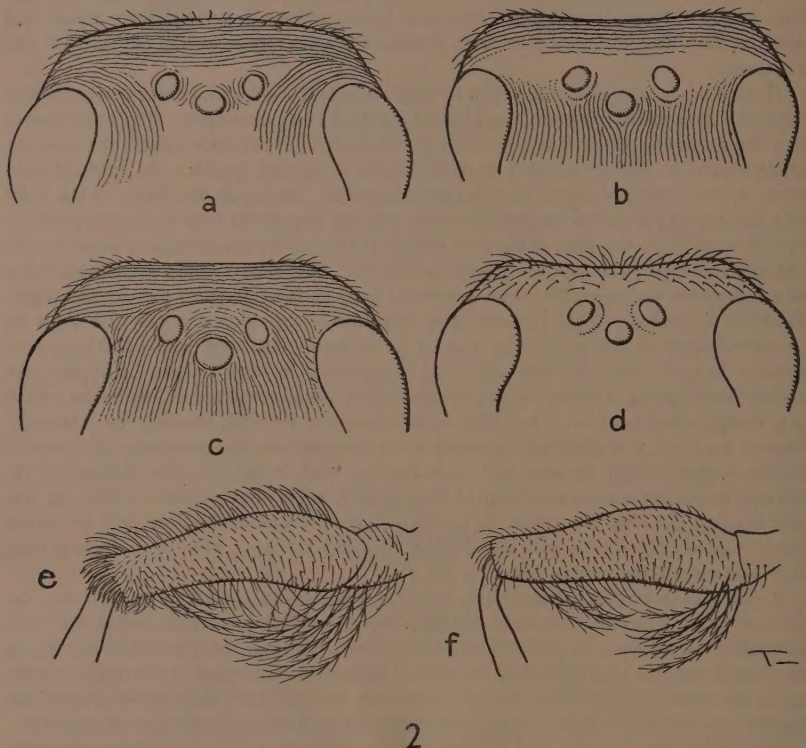

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Fig. 2.—Upper portion of head of a, *H. epiensis* ♀; b, *H. aponi* ♀; c, *H. ounuensis* ♀; d, *H. zingowli* ♀; hind femur of e, *H. epiensis* ♀; f, *H. zingowli* ♀.

the abdomen is clothed with long, pale, erect, brownish-white hairs, the 6th ventrite apically submembranous, this part appearing granulate from the microscopic sculpture of its surface. Length 6·25 to nearly 7 mm.

The two males taken differ from one another in some points, but appear to belong to one species without much doubt. The several teeth of the hind calcar are prominent, but less long than those of the ♀. The type is a ♀ from Ounua.

Hab. New Hebrides: Malekula Is., Ounua, 4 ♀♀, iii.–iv.1929. 1 ♂ with the same date and one in ii.1929. The ♀♀ were all taken on flowers of *Piper* sp. and one of the ♂♂ was captured by an Asilid fly.

Halictus tannaensis Cockerell.

H. tannaensis Cockerell, 1916, *Proc. Acad. nat. Sci. Philad.* **68**: 368.

♀. Head green or blue, the clypeus and supraclypeal plate more brightly metallic, the former with a conspicuous green or blue band more or less bordered with reddish-purple or copper, coarsely, unevenly punctured, the punctures finer posteriorly, the latter with very fine and sparse punctures. Mesonotum green, blue or more or less brassy, much more conspicuously metallic than the head; abdomen variable in colour from aeneous to blue. Hind tibiae, viewed from the inner side, with the fringe above sooty grey or dark fuscous.

In general the form, sculpture, and clothing is much as in the two preceding species, but the mesonotum appears much smoother, the punctation being less dense; in *ounuensis* the longitudinal striation of this part is much more conspicuous. The anterior area of the propodeum, viewed from in front, is more or less distinctly bordered by a raised edge or margin behind at least in the middle, which is not the case in *epiensis*.

The mesonotum has, as in the allied species, an extensive area in front where the punctation becomes extremely sparse and the punctures subobsolete, the microscopic sculpture of the surface being very dense; behind this it is copiously punctured, but to a considerable extent at least on the disc the punctures are well separated or remote, becoming closer towards the parapsidal lines. There is an appearance of fine longitudinal striation or aciculation of the surface due to the arrangement of the punctures and the minute sculpture between them, but this is very different from the conspicuous striation of *ounuensis*, and the erect plumose hairs of the postscutellum and propodeum are less dense than in that species. The propodeum anteriorly is coarsely, longitudinally rugose and shining, with a more or less evident raised hind margin to the area at the middle posteriorly, but this raised edge is generally irregular or more or less interrupted; the lateral areas are as a rule much more finely and sparsely rugose than the anterior, but the sculpture of most parts of the thorax is quite variable. Abdomen either dark blue or often with the basal parts of the tergites distinctly aeneous, the outstanding hairs on each side white.

Wings in fresh specimens hyaline when spread, or at any rate much less infuscated than in the preceding. Calcar of hind tibiae with 4 or 5 teeth, sometimes a less developed 6th tooth. Length usually about 7 mm. (For fig. of propodeum see fig. 3, d.)

♂. Head in front dull, dark green or blue; the clypeus and the supraclypeal plate, or at least the former, as a rule smoother, less dull, more brightly metallic, remotely punctured; face clothed with erect pale hairs, the sides of the head behind the eyes in dorsal aspect straight or slightly concave in outline to the distinct occipital angles; antennae black or very dark brown above or behind, usually browner beneath (or in front).

Mesonotum, mesopleura, scutellum at the sides, the postscutellum and the propodeum (in dorsal aspect) except the anterior area clothed with erect pale pubescence, sometimes more or less sordid; the mesonotum aeneous or blue and together with the scutellum more brightly metallic than the head, the surface quite shining in some examples, but hardly at all so in others, the punctures very fine, feebly impressed, never very dense and sometimes sparse over most of the surface, as a rule much more feeble and sparser than in the ♀; propodeum with the anterior area longitudinally rugose, the *rugae* variable in strength, sometimes conspicuously reticulate, sometimes hardly at all so, usually more or less distinctly margined behind at least in the middle, but this margin is sometimes wanting and the sculpture is much as in *epiensis* ♀. Wings hyaline or lightly infuscate, becoming dark in old specimens. Hind coxae and femora metallic black, the tibiae and tarsi usually dark brown.

Abdomen usually dark blue, sometimes the tergites are more aeneous either basally or altogether; the 2nd and 3rd tergites, as in the ♀ of this and allied species, have a clothing of close-set and very short hairs basally, forming an indistinct basal band widest at the sides, the punctures on this part being very feeble and hardly noticeable owing to the dense surface

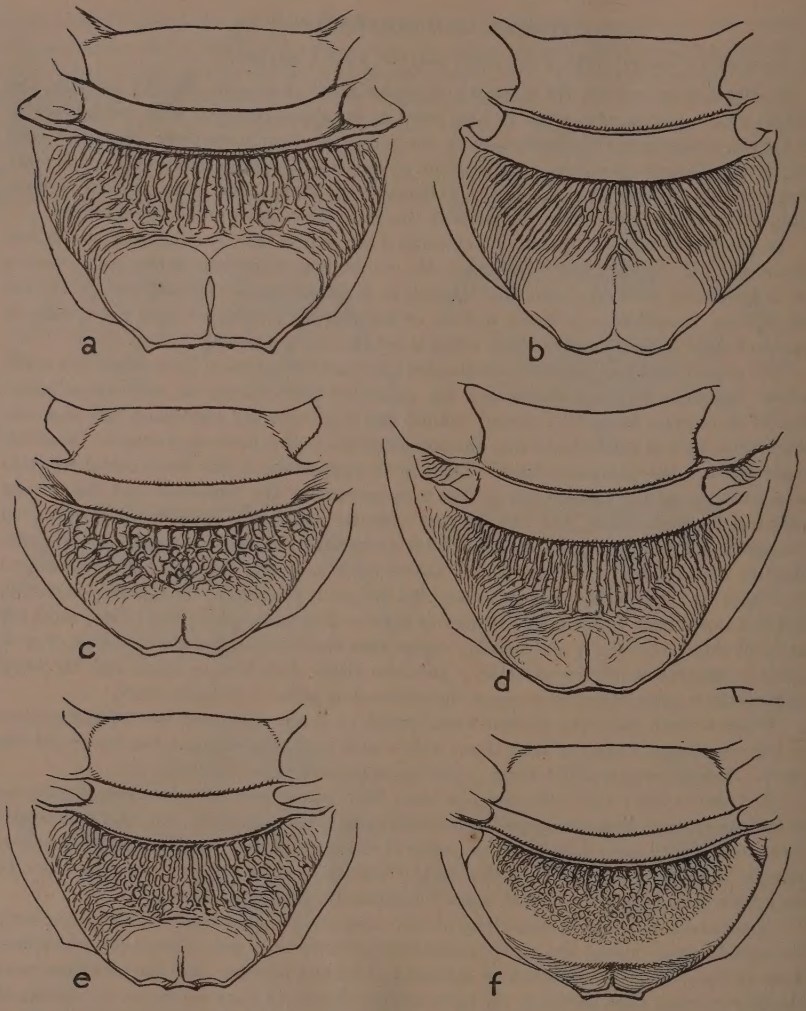

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FIG. 3.—Scutellum, postscutellum and propodeum in dorsal aspect of a, *H. wilsoni* ♀; b, *H. epiensis* ♀; c, *H. aponi* ♀; d, *H. tannaensis* ♀; e, *H. ounuensis* ♀; f, *H. zingowli* ♀.

sculpture consisting largely of very fine transverse striation, which on the impunctate apical impressions becomes even closer; the pygidial area is well defined, red or pitchy, punctate, and truncate or very widely rounded apically; ventrally the abdomen is clothed with very long, erect, pale hairs. Length usually about 6 mm. The ♂ of this species is difficult to describe, owing to the variation in characters usually important, but it cannot be confused

with that of *ounuensis*, which has quite a different mesonotal sculpture, much darker wings, denser plumose hairs on the hinder parts of the thorax, &c. The unknown ♂ of *epiensis* will probably have a much denser punctation of the mesonotum, and usually a more or less different propodeal sculpture.

Hab. New Hebrides: Malekula Is., Ounua 6 ♀♀ and 7 ♂♂, ii., iii.1929; Malua Bay, 15 ♀♀ and 12 ♂♂, vi.1929; South West Bay, 2 ♂♂, i.1930. Erromanga Is., 1 ♀, vii.1930. Banks Islands, Vanua Lava Is., 7 ♀♀ and 13 ♂♂, xii.1929; Santo Is., 1 ♀, viii.–ix.1929. Taken on flowers of *Ipomea pes-capri*, *Wedelia* sp. and "Pawpaw." One ♂ caught by a small green spider. It nests in bamboo.

Halictus wilsoni sp. n.

♀. Clypeus anteriorly black or purplish-black, behind this a more or less definite green metallic band, bordered in front and behind with reddish copper colour, the frons dull aeneous, greenish or brassy. Mesonotum bright green or blue, sometimes brassy or coppery on the disc, the propodeum much darker, blue-black. Abdomen blue and shining on the apical impressions of the tergites, in front of these a dull dark purplish transverse band, preceded by the more aeneous basal part. Ventral scopa white or nearly so, at most a little brownish or infuscate. Legs with the femora black, the tibiae and tarsi more brown in colour. Wings rather lightly infuscate, in the two paratypes with ragged margin to the wings they are darker than in the type.

Head in dorsal aspect with the sides behind the eyes nearly straight, or slightly concave to the occipital angles, the face dull and densely sculptured in the middle and also with the usual longitudinal striation, the vertex transversely striate, and other characters as in the preceding species.

Mesonotum with the surface appearing closely granulate due to the microscopic reticulation of the surface, the mesh being much smaller than the larger punctures; these over most of the surface are very remote, much sparser than in *tannaensis*, which has at least a copious, though in some parts not very dense, punctation; the scutellum is generally more shining than the mesonotum owing to the obsolescence of the microscopic surface sculpture to some extent; anterior area of the propodeum with strong longitudinal rugae between which there is a minute sculpture of the surface and bordered apically at the middle by a raised edge; the lateral areas with sparse finer wrinkles, the posterior face granulate, having a few feeble punctures and some transverse rugae above the insertion of the abdomen; the metapleura above are traversed by a variable number of rugae, the pubescent mesopleura adjoining having a transverse striation. The calcar of the hind tibia has 4 or 5 prominent teeth. Length as in *tannaensis*.

This species is very closely allied to *tannaensis*, which, although it varies considerably in the sculpture of the mesonotum, never has this so sparsely punctured as does the present species.

The males captured with these females are extremely like those of *tannaensis*, both species being variable in the punctation of the mesonotum, but as a rule on most of the surface the punctures are more remote than in the latter, and the larger ones, the punctures being unequal, are also less fine. The inner calcar of the hind tibiae in 2 examples examined under a high power had 4 prominent lamellate teeth, shorter than in the ♀.

The genitalia differ little, if at all, from those of *tannaensis*.

The type is a ♀ from Aneityum.

Hab. New Hebrides: Aneityum Is., x.–xi.1930. Named after Mr. Wilson of Aneityum, to whom the collector is indebted for many courtesies and

much help in her work of collecting. 4 ♀♀ and 7 ♂♂ were obtained, type ♀ and allotype ♂, x.1930.

Halictus aponi sp. n.

Mesonotum metallic, green, or more or less brassy, the head and propodeum less conspicuously metallic and darker in colour; antennae black or blackish fuscous with the flagellum beneath more or less brown or rufescent; legs with the tibiae and tarsi sometimes clear testaceous, the former often more or less infuscate in the middle; wings hyaline, stigma more or less dark brown.

Face wide, roundish, the frons dull, densely sculptured, in some aspects with evident longitudinal striation, the pubescence short and pale, the clypeus very sparsely punctured on its posterior half, the supraclypeal plate with at most a few feebly impressed punctures; vertex without the strong transverse striation of the larger species.

Pronotum in dorsal aspect with the humeral angles distinct, nearly rectangular; mesonotum dull, flattish, appearing densely granulate owing to the close reticulation of the surface, and with a very fine and shallow, copious but not dense, even punctation, the punctures quite distinct in some aspects, but less so in others owing to the granulation; the clothing consists of very short subdecumbent hairs and a few longer erect ones, and the punctures become effaced near the anterior margin, as in the other species; scutellum generally rather less dull than the mesonotum and the punctures more remote, the postscutellum with longish pale erect hairs; propodeum somewhat strongly reticulately rugose, the wrinkling extending back to the brow, which is smooth except for very fine microscopic sculpture, the undefined lateral areas with finer wrinkles, the posterior surface granulate and with some transverse rugae on either side of the middle line above the abdominal insertion, clothed with pale hairs erect from the surface.

Abdomen with the first tergite highly polished, clothed with shortish white hairs on each side, the apical impression distinct, having a very fine transverse rugulosity or striation which is not dense enough to render the surface dull, and immediately in front of this some surface sculpture is usually visible under a very strong lens; 2nd tergite with a very short, pale decumbent clothing, the apical impression well defined, with distinct transverse sculpture and a well-marked row of hairs springing from its base and, unless abraded, extending right across the segment, though those on the middle part are very short; 3rd and 4th tergites have a similar but more conspicuous clothing of short hairs, and the setae springing from the base of the apical impression of the 3rd even on the middle part reach nearly to the apical margin; outstanding white hairs at the sides of 4th and 5th tergites long, longer than those on the preceding, hairs around the *rima* with golden sheen; ventral scopa white in clean specimens. Calcar of hind tibiae with 2–4 teeth, when with 4 the last is formed by a widening of the surface and is not prominent like the others, the basal tooth is often difficult to see without manipulation. Length about 4 mm.

(For fig. of top of head and of the propodeum see fig. 2, b.)

The type is a ♀ from Ounua.

Halictus aponi var. **erromangana** var. n.

The mesonotum and scutellum are more blue in colour, the antennae almost wholly black, the hind tibiae are black, at most a little reddish at base and apex, the *rugae* of the anterior area of the propodeum are finer and more numerous, longitudinal rather than reticulated, and are not unlike those of *epiensis*. The sculpture of head, mesonotum and abdomen is like that of the typical form. The differences, if constant, would indicate a distinct species or subspecies.

Hab. New Hebrides: Malekula Is., Ounua, iii.–iv.1929, 6 ♀♀ (one the type); var. *erromangana*, Erromanga Is., viii.1930, 1 type ♀. Named

after a native mission teacher, Apon, who helped to collect these bees. He was eaten later by cannibals.

Halictus zingowli sp. n.

♀. Aeneous, the face sometimes with purple tints, antennae dark brown or nearly black, flagellum beneath apically more or less rufescent, hind tibiae and tarsi testaceous, darker or brown above. Stigma dark brown, costa and subcosta black or nearly so, the tegulae testaceous.

Face appearing densely granulate from the microscopic dense reticulation of the surface, clothed with pale hairs, rather more conspicuous beneath than above the antennae, between which there is no raised line or carina.

Mesonotum dull from its extremely dense microscopic reticulation, seen from the side with very sparse erect hairs, each of which springs from a very feeble impression or puncture; there is also a clothing of inconspicuous, but more numerous, shorter hairs; humeral angles of the pronotum inconspicuous and obtuse; scutellum like the mesonotum in sculpture with a thin line of pale erect hairs along its hind margin, and also a similar one on the post-scutellum, the mesopleura with granulate sculpture; propodeum very long, distinctly longer than the scutellum, the anterior area not margined behind, the sculpture a somewhat fine and close rugose reticulation not reaching the brow, the minute surface sculpture similar to that of the mesonotum, but the reticulation is less dense (the mesh larger); at the sides there is a clothing of longish pale hairs, but the vertical posterior face and the undefined lateral areas are glabrous or almost so, with similar microscopic reticulation of the surface.

Abdomen with very dense transverse striation both on the basal and apical parts of the tergites, the first two of these with sparse pale hairs only at the sides, the apical part not or hardly impressed; on the 4th tergite this part is better defined, the row of hairs which spring from its base being longer, though towards the middle they do not nearly reach back to the apical margin; this tergite has a sparse general clothing of hairs, these not being confined to the lateral parts, but the punctures from which they spring are very fine and hardly visible under a very strong lens. The hairs about the *rima* are pale and have a golden glitter. Hairs of the ventral scopa white or whitish, very long and sparse on ventrites 2 and 3, but dense on the down-turned sides of the tergites. Teeth of calcar of hind tibiae 4, the apical one more or less decumbent. Length about 5 mm.

(For fig. of face, upper part of head, propodeum and hind femur see figs. 1, c, 2, d, 3, f, 2, f.)

The type is a ♀ from Ounua.

Hab. New Hebrides: Malekula Is.,* Ounua, 2 ♀♀, ii.1929, South West Bay, 1 ♀, ii.1930. One specimen has the thorax largely and the abdomen of a pitchy immature-looking colour, and paler stigma, as often occurs in small bees in tropical countries at some seasons.

* In addition to these specimens there are fragments of two others. An abdomen gummed on card from Malekula and a thorax with wings and some legs from Erromanga Is.